

REMARKS

Claims 19-39 are active in the present application. Reconsideration is respectfully requested.

The present invention is related to a laminated glass glazing that is transparent and has infrared light reflecting characteristics.

Specification Amendments

The specification has been amended in order to correct matters of form by introducing appropriate section headings therein. Further, pages 1 and 2 of the specification have been amended by deleting all reference to the originally active claims in the application. Finally, page 3, line 31 has been amended as suggested by the Examiner. Still further, the text at page 3, lines 29-32 has been amended to clarify the meaning of the same. None of the amendments introduces new matter into the specification. Entry of the amendments is respectfully requested.

Claim Objection

Claim 21 has been amended in the manner suggested by the Examiner, thereby obviating the objection. Withdrawal of the objection is respectfully requested.

Claim Amendments

Claims 19 and 28 have been amended in order to make minor changes thereto. The amendments do not introduce new matter into the case. Entry of the amendments is respectfully requested.

Claim Rejection, 35 USC 112

The rejection of Claim 21 is believed to be obviated by the amendment made to the text at page 3, line 26. The amendment made is that which has been requested by the Examiner. Entry of the amendment is respectfully requested.

Invention

The present invention is directed to a transparent laminated glazing that is formed of (i) an exterior glass pane having a first face intended to face the exterior of a vehicle or a room and a second face intended to face the interior of a vehicle or a room, (ii) an interior glass pane having a third face intended to face the exterior of the vehicle or room and a fourth face intended to face the interior of the vehicle or room, (iii) an antisun coating that reflects solar rays with wavelengths greater than 780 nm that comprises a metallic layer incorporated between two dielectric layers, wherein each of the dielectric layers is a metal oxide or a metal nitride, and (iv) a low-emissive transparent coating that reflects heat rays with wavelengths greater than 1100 nm. The exterior glass pane is closer to the exterior of the vehicle or room, the interior glass pane is closer to the interior of the vehicle or room, the exterior glass pane and the interior glass pane are united by a thermoplastic intercalating sheet that contacts the second face of the exterior glass pane and the third face of the interior glass pane, and the antisun coating is closer to the exterior of the vehicle or room than the low-emissive transparent coating.

Prior Art Rejection

The primary references of interest are the Frost et al '329 patent and the McKown et al '018 patent. Neither one of the patents individually nor taken in combination suggest the claimed transparent laminated glazing of the present invention.

The Frost et al patent discloses a laminated glass structure that is comprised of two glass sheets between which is positioned an infrared-reflecting layer which, as described at column 2, lines 55-59, is a laminate of at least one silver layer embedded between metallic and/or dielectric layers. There is no other light reflecting layer within the structure of the laminate. The single light reflecting layer of the laminate disclosed is the silver layer material

which is the same structure of the antisun layer structure of the laminated glazing of the present invention. There is absolutely no teaching of some other light reflecting layer in the laminate disclosed, let alone the low emissivity infrared reflecting layer of the presently claimed laminate. Further, the laminated glazing of the patent is used as a heat-protective pane for automobiles.

The McKown et al patent discloses a materially different laminated glazing for use as a solar panel in automobiles and in buildings. As explained in the Summary of the Invention, the glazing of the patent is based upon the combination of a low emissivity layer that has the capability of reflecting mid-range infrared light in the range of 2.5 to 25 microns (2500 to 25,000 nm) and a NIR absorbing layer that absorbs heat of infrared light within the range of 750 to 2500 nm. Thus, the design of the laminated glazing of the patent is a glazing that not only permits visible light to pass therethrough, but also near infrared light. On the other hand, the laminated glazing of the present invention is quite different in its light reflecting properties than the structures, not only of McKown et al, but also of Frost et al. That is, the glazing of the present invention has a structure in which an antisun layer, of the type disclosed in the glazing of Frost et al, is positioned between two glass panes of the glazing, and a separate low emissivity layer. The antisun layer is positioned closer to what is designated as the exterior of the two glass panes of the glazing, while the low emissivity layer is positioned on what is designated as the interior of the glazing. In operation, incident solar light from the exterior first impinges upon the antisun layer which reflects light having a wavelength greater than 780 nm which means that most of the impacting infrared radiation is reflected from the glazing. Visible light passes through the glazing. On the interior side of the glazing, the low emissivity layer reflects thermal infrared radiation having wavelengths greater than 1100 nm that is from interior sources back into the interior. Clearly, neither Frost et al nor McKown et al suggests the laminated glazing as defined in the present claims.

Accordingly, withdrawal of the obviousness ground of rejection based on 35 USC 103 based on the two patents is respectfully requested.

The Anderson et al, Guiselin et al Shibata et al, Ida et al, Van Laethem et al and Miyazaki et al are all of secondary interest and contain no disclosure that brings the primary Frost et al and McKown et al patents closer to the present invention. In fact, the secondary references have been cited as pertinent to secondary, i.e., dependent, aspects of the invention upon which patentability does not depend. Accordingly, withdrawal of the remaining grounds of rejection is respectfully requested.

It is now believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Jean-Paul Lavallee
Registration No. 31,451

Frederick D. Vastine, Ph.D.
Registration No. 27,013

Customer Number

22850

Tel.: (703) 413-3000

Fax: (703) 413-2220

NFO:FDV